

Related U.S. Application Data

- application for the reissue of Pat. No. 7,982,060, filed as application No. PCT/US2005/019669 on Jun. 3, 2005.
- (60) Provisional application No. 60/576,642, filed on Jun. 3, 2004, provisional application No. 60/626,769, filed on Nov. 10, 2004, provisional application No. 60/663,300, filed on Mar. 18, 2005.
- (51) **Int. Cl.**
- | | |
|--------------------|-----------|
| C07D 493/18 | (2006.01) |
| C07D 493/22 | (2006.01) |
| C07D 493/20 | (2006.01) |
| C07D 317/72 | (2006.01) |
| C07H 15/26 | (2006.01) |
| C07C 33/42 | (2006.01) |
| A61K 31/341 | (2006.01) |
| C07D 493/10 | (2006.01) |
| C07D 307/28 | (2006.01) |
| C07D 307/33 | (2006.01) |

(56) References Cited

U.S. PATENT DOCUMENTS

6,214,865	B1	4/2001	Littlefield et al.
6,365,759	B1	4/2002	Littlefield et al.
6,469,182	B1	10/2002	Littlefield et al.
6,653,341	B1	11/2003	Littlefield et al.
7,470,720	B2	12/2008	Littlefield et al.
7,982,060	B2	7/2011	Austad et al.
8,093,410	B2	1/2012	Chase et al.
8,097,648	B2	1/2012	Littlefield et al.
8,148,554	B2	4/2012	Seletsky et al.
8,203,010	B2	6/2012	Endo et al.
8,350,067	B2	1/2013	Endo et al.
8,445,701	B2	5/2013	Austad et al.
8,598,373	B2 *	12/2013	Hu
			C07D 493/22
			549/348
8,618,313	B2	12/2013	Benayoud et al.
8,884,031	B2	11/2014	Chase et al.
RE45,324	E	1/2015	Austad et al.
8,927,597	B2	1/2015	Endo et al.
8,975,422	B2	3/2015	Fang et al.
8,987,479	B2	3/2015	Chase et al.
9,206,194	B2 *	12/2015	Hu
9,303,039	B2 *	4/2016	Zhang
9,303,050	B2	4/2016	Benayoud et al.
9,382,262	B2	7/2016	Endo et al.
9,469,651	B2	10/2016	Hu
9,604,993	B2	3/2017	Chase et al.
9,695,188	B2	7/2017	Hu et al.
2004/0198806	A1 *	10/2004	Littlefield et al.
2006/0154312	A1	7/2006	Agoulnik et al.
2007/0244187	A1	10/2007	Austad et al.
2009/0104285	A1	4/2009	Littlefield et al.
2009/0198074	A1	8/2009	Chase et al.
2009/0203771	A1	8/2009	Inanaga et al.
2010/0190843	A1	7/2010	Agoulnik et al.
2011/0054194	A1	3/2011	Hu
2011/0172446	A1	7/2011	Littlefield et al.
2011/0184190	A1	7/2011	Endo et al.
2012/0029213	A1	2/2012	Austad et al.
2012/0095242	A1	4/2012	Chase et al.
2012/0309988	A1	12/2012	Austad et al.
2014/0163095	A1	6/2014	Kremer et al.
2016/0214992	A1	7/2016	Chase et al.
2016/0264594	A1	9/2016	Fang et al.
2016/0376294	A1	12/2016	Endo et al.
2017/0071903	A1	3/2017	Funahashi et al.
2017/0100367	A1	4/2017	Asano et al.
2017/0100368	A1	4/2017	Cox et al.
2017/0298078	A1	10/2017	Hu et al.

FOREIGN PATENT DOCUMENTS

EP	0572109	A1	12/1993
JP	2002-518384		6/2002
JP	2002-518384	A	6/2002
WO	WO 93/17690		9/1993
WO	WO-93/17690	A1	9/1993
WO	WO 99/65894		12/1999
WO	WO-99/65894	A1	12/1999
WO	WO 2004034990	A2	4/2004
WO	WO 2005/118565		12/2005
WO	WO 2005118565	A1	12/2005
WO	WO 2006076100	A2	7/2006
WO	WO 2007061874	A2	5/2007
WO	WO 2009/046308		4/2009
WO	WO-2009/046308	A1	4/2009
WO	WO 2009/064029		5/2009
WO	WO-2009/064029	A1	5/2009
WO	WO 2009/124237		10/2009
WO	WO-2009/124237	A1	10/2009
WO	WO 2011/094339		8/2011
WO	WO-2011/094339	A1	8/2011
WO	WO 2012147900	A1	11/2012
WO	WO 2014087230	A1	6/2014
WO	WO 2015066729	A1	5/2015
WO	WO 2015085193	A1	6/2015
WO	WO 2015134399	A1	9/2015
WO	WO 2015183961	A1	12/2015
WO	WO 2015184145	A1	12/2015
WO	WO 2016141209	A1	9/2016
WO	WO 2016179607	A1	11/2016

OTHER PUBLICATIONS

Stamos et al., "A Mild Preparation of Vinyliodides from Vinylsilanes," *Tetrahedron Lett.* 37(48), pp. 8647-8650 (1996). Communication pursuant to Rule 114(2) EPC from counterpart European Application EP 05760356.5, dated Jul. 4, 2012. Wan et al., "Asymmetric Ni(II)/Cr(II)-Mediated Coupling Reaction: Stoichiometric Process," *Organic Letters* 4(25), pp. 4431-4434 (2002). Supporting Information for Wan et al., "Asymmetric Ni(II)/Cr(II)-Mediated Coupling Reaction: Stoichiometric Process," *Organic Letters* 4(25), pp. 4431-4434 (2002). RN: 546141-26-8; CN: 1,2-Propanediol, 3-[{(2R,3R,4R,5S)-tetrahydro-3-hydroxy-4-[(phenylsulfony)methyl]-5-(2-propen-1-yl)-2-furanyl}-1,2-dibenzoate, (2S); Entered STN: Jul. 11, 2003. RN: 546141-39-3; CN: 1,2-Propanediol, 3-[{(2R,3R,4R,5S)-tetrahydro-3-methoxy-4-[(phenylsulfony)methyl]-5-(2-propen-1-yl)-2-furanyl}-1,2-dibenzoate, (2S); Entered STN: Jul. 11, 2003. RN: 546141-40-6; CN: 1,2-Propanediol, 3-[{(2R,3R,4R,5S)-tetrahydro-3-methoxy-4-[(phenylsulfony)methyl]-5-(2-propen-1-yl)-2-furanyl}]; (2S); Entered STN: Jul. 11, 2003. RN: 185411-09-0; CN: L-arabino-D-allo-Dodeconic acid, 3,7:6, 10-dianhydro-8,9-O-cyclohexylidene-2,4,5-trideoxy-, methyl ester; Entered STN: Jan. 28, 1997. English translation of the Office Action from the Japanese Patent Office for the counterpart Japanese Application No. 2007-515,643, dated Apr. 24, 2012. English translation of the Office Action from the Japanese Patent Office for the counterpart Japanese Application No. 2007-515,643, dated Aug. 16, 2012. Takai et al., "Reactions of Alkenylchromium reagents prepared from alkenyl trifluoromethanesulfonates (triflates) with chromium (II) chloride under nickel catalysis," *J. Am. Chem. Soc.* 108, pp. 6048-6050 (1986). Third Party Observation pursuant to Article 115 EPC relating to counterpart European Application EP 05760356.5, dated Mar. 26, 2012. Third Party Observation pursuant to Article 115 EPC relating to counterpart European Application EP 05760356.5, dated Jan. 9, 2013. U.S. Patent and Trademark Office, "Clarification of Criteria for Reissue Error in View of In re Tanaka" dated Aug. 1, 2011.